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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/658,880	09/11/2000	Marco Di Benedetto	112025-0198	4991
24267	7590	03/25/2004	EXAMINER	
CESARI AND MCKENNA, LLP			MEW, KEVIN D	
88 BLACK FALCON AVENUE			ART UNIT	
BOSTON, MA 02210			PAPER NUMBER	

2664

DATE MAILED: 03/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/658,880

Applicant(s)

BENEDETTO ET AL.

Examiner

Kevin Mew

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 4 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3.
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Detailed Action

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-3, 5-10, drawn to a layer 2 switch and a method for performing spanning tree protocol and switch port status change, classified in class 370, subclass 256.

II. Claim 4, drawn to a data memory structure for storing switch port status entries, classified class 370, subclass 392.

2. Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as a layer 2 switch is capable of setting a boundary port to a blocked status when said boundary port is selected by the spanning tree protocol as a root port whereas in Group II, the claimed invention is directed to the storage of switch port status entries. See MPEP § 806.05(d).

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

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5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with Attorney Sidney Johnston on 03/16/04, a provisional election was made without traverse to prosecute the invention of Group I, claims 1-3, 5-10. Applicant in replying to this Office action must make an affirmation of this election. Claim 4 of Group II is withdrawn from further consideration by the examiner, 37 CFR 1.142(b) as being drawn to a non-elected invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claim 6 is rejected under 35 U.S.C. 112, first paragraph as a single means claim because the specification, while being enabling individually for every step described in the body of the claim, does not reasonably provide simultaneous enablement for all the steps by a single means. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

A single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. In re Hyatt, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983) (A single means claim which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification disclosed at most only those means known to the inventor.).

When claims depend on a recited property, a fact situation comparable to Hyatt is possible, where the claim covers every conceivable structure (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor.

It is suggested to the applicant that the phrase "Means for operating" should be replaced with "A method for operating," and that each step described in the body of the

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claim should be prefixed with the phrase "means for" instead of using the phrase "Means for" in the preamble of the claim.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8, an independent claim, recites the limitation "the process of claim 7" in line 1 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

10. Claim 10 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The non-statutory subject matter is "Electromagnetic signals having instructions" in line 2 of the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-3, 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goldman et al. (US Patent 6,628,661).

Regarding claims 1-3, 5-7, Goldman discloses a layer 2 switch (**a switch such as a bridge**, see lines 21-22, col. 5, and A1, Fig. 3) in a computer network (**a network**, see lines 15-16 and 39-40, col. 5, and Fig. 3; note that element 30 is core network and element A1 is customer network in Fig. 3), comprising methods and processes to provide:

a plurality of ports (see **perimeter port coming out of switch A1 and connecting switch A0 and perimeter port coming out of switch A1 and connecting switch A2**, Fig. 3), at least one port of said plurality of ports capable of being set to a status of root guard protected (RG status) (**switch A1 is set with a particular priority value that is greater than zero according to the distance-to-core method and a priority value greater than zero is interpreted as root guard protected status; note that a priority value only priority value of zero would be considered as candidate for the choice of root**, see lines 60-67, col. 6);

first circuits for running the spanning tree protocol (STP) in said layer 2 switch (**a digital electronic circuitry for implementing the invention, comprising running the conventional spanning tree algorithm to determine the MAC address of each switch,**

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see lines 61-67, col. 5 and lines 61-67, col. 8), said STP capable of selecting said at least one port as either a designated port or as a root port (**the switch that happens to have the lowest MAC address will be given the highest priority and thus will be chosen as the spanning tree's root**, see lines 65-67, col. 5 and line 1, col. 6);

second circuits for running root guard protocol (**a digital electronic circuitry for implementing the invention, comprising the exchange heartbeat protocol frames between switches for determining the distance-to-core/priority value**, see lines 61-67, col. 8 and lines 41-50, col. 6), and said root guard protocol (**heartbeat protocol**) determining whether or not a port set to RG status has been selected by STP as a root port (**a digital electronic circuitry for implementing the invention, comprising exchanging and reconciling heartbeat frames for determining both the priority value (RG status) and MAC address where the lowest MAC address would be selected by STP as the root**, see lines 10-13, col. 7).

Goldman does not explicitly disclose using blocking circuits to set said at least one port into blocked status, said blocking circuits setting said at least one port into blocked status in response to said at least one port being both in root guard protected status and selected by STP as a root port.

However, Goldman discloses that the state information made available to switches through the heartbeat protocol can be used to reconfigure a switch's port from forwarding state to blocking state (see lines 1-6 and 61-67, col. 8). Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to modify the switch of Goldman such that the port state of the switch with priority value greater than one (root guard protected status) would be reconfigured from a forwarding

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state to a blocking state by a digital electronic circuitry such as the port status change due to the heartbeat protocol and the digital electronic circuitry taught by Goldman. The motivation to do so is to center the spanning tree at the network's core to provide significant increases in the speed and efficiency with which the network traffic can be handled because the higher volume of network traffic passing through or near the root is processed by the highest bandwidth resources in the network.

Regarding claim 8, Goldman discloses all the aspects of the claimed invention set forth in the rejection of claim 7 above. In addition, Goldman discloses a programmable processor for:

executing a process (**executing a program of instructions**) in a CPU control engine (**programmable processor**) to set said perimeter port to a status of root guard protected;

executing a process (**executing a program of instructions**) in said CPU control engine (**programmable processor**) to run said spanning tree protocol; and,

executing a process (**executing a program of instructions**) in said CPU control engine (**programmable processor**) to execute said root guard protocol (**the method steps of the invention be performed by a programmable processor executing a program of instructions to perform functions of the invention, see lines 66-67, col. 8 and lines 1-2, col. 9).**

Regarding claim 9, Goldman discloses all the aspects of the claimed invention set forth in the rejection of claim 7 above. In addition, Goldman discloses a computer readable memory device (**a data storage device**), comprising: said computer readable memory device (**a data storage device**) containing instructions for practice of the

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method of claim 7 (**one or more computer programs that are executable on a programmable system including a programmable processor coupled to retrieve instructions from and transmit instructions to a data storage system**, see lines 3-8, col. 9).

Regarding claim 10, Goldman discloses all the aspects of the claimed invention set forth in the rejection of claim 7 above. In addition, Goldman discloses electromagnetic signals propagated over a computer network, comprising: said electromagnetic signals having instructions (**retrieve instructions from and transmit instructions to a data storage system**; note that electromagnetic signals having instructions are interpreted here as data bits) for practice of the method of claim 7 (**one or more computer programs that are executable on a programmable system including a programmable processor coupled to retrieve instructions from and transmit instructions to a data storage system**, see lines 3-8, col. 9).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure with respect to Spanning Tree Protocol Root Guard.

US Patent 6,535,490 to Jain

US Patent 6,407,985 to Jain

US Patent 6,697,339 to Jain

US Patent 6,678,241 to Gai et al.

US Patent 6,628,624 to Mahajan et al.

US Patent 6,246,669 to Chevalier et al.


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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Mew whose telephone number is 703-305-5300.

The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 703-305-4798. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


RICKY NGO
PRIMARY EXAMINER

KDM
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